Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Missile Defense Agency

R-1 ITEM NOMENCLATURE

0400: Research, Development, Test & Evaluation, Defense-Wide

APPROPRIATION/BUDGET ACTIVITY

PE 0604881C: SM-3 BLOCK IIA CO-DEVELOPMENT

DATE: February 2011

BA 4: Advanced Component Development & Prototypes (ACD&P)

| COST (\$ in Millions)                   | FY 2010 | FY 2011 | FY 2012<br>Base | FY 2012<br>OCO | FY 2012<br>Total | FY 2013 | FY 2014 | FY 2015 | FY 2016 | Cost To<br>Complete | Total Cost |
|---|---------|---------|-----------------|----------------|------------------|---------|---------|---------|---------|---------------------|------------|
| Total Program Element                   | 247.825 | 318.800 | 424.454         | -              | 424.454          | 357.194 | 279.444 | 203.553 | 25.165  | Continuing          | Continuing |
| MD09: SM-3 Block IIA Co-<br>Development | 247.825 | 318.800 | 407.500         | -              | 407.500          | 343.495 | 268.447 | 196.344 | 25.156  | Continuing          | Continuing |
| MD40: Program-Wide Support              | -       | -       | 16.954          | -              | 16.954           | 13.699  | 10.997  | 7.209   | 0.009   | Continuing          | Continuing |

#### Note

NA

### A. Mission Description and Budget Item Justification

The Aegis Ballistic Missile Defense (Aegis BMD) mission is to deliver an enduring, operationally effective and supportable Ballistic Missile Defense capability to defend the nation, deployed forces, friends and allies, and to increase this capability by delivering evolutionary improvements as part of Ballistic Missile Defense System (BMDS) upgrades. Aegis BMD provides a forward-deployable, mobile capability to detect and track Ballistic Missiles of all ranges, and the ability to destroy Short-Range Ballistic Missiles (SRBM), Medium-Range Ballistic Missiles (MRBM), and Intermediate-Range Ballistic Missiles (IRBM) in the midcourse phase of flight. Upgrades to both the Aegis BMD Weapon System and the SM-3 configurations evolve Aegis BMD to provide effective, supportable defensive capability against more difficult threats.

Beginning in 2006, Aegis BMD and the Japan Ministry of Defense (JMOD) have undertaken an SM-3 Cooperative Development (SCD) program, which consists of an upgrade of the SM-3 Blk IB missile to a 21-inch diameter SM-3 missile (SM-3 Blk IIA). The objective of the SCD project is the development and initial at-sea flight test of the SM-3 Blk IIA missile.

Key technology improvements planned for the SM-3 Blk IIA missile include an increase in velocity and an increase in range provided by a 21-inch diameter rocket motor propulsion stack, more than doubled seeker sensitivity and more than three times divert capability incorporated in an advanced kinetic warhead. Key component technologies to be developed include, but are not limited to: lightweight nosecone, advanced kinetic warhead, 21-inch second stage rocket motor, and 21-inch third stage rocket motor. The U.S. and Japan will equitably share both work and cost.

BMD Systems Engineering:

BMD Systems Engineering provides System Description Document and System Specifications for elements to design, build, integrate and test BMDS components. These products optimize performance at the system level and further ensure that the assessment of the designed BMD System is based on sufficient ground and flight

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Missile Defense Agency

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

0400: Research, Development, Test & Evaluation, Defense-Wide

PE 0604881C: SM-3 BLOCK IIA CO-DEVELOPMENT

BA 4: Advanced Component Development & Prototypes (ACD&P)

testing. Aegis BMD compliance with BMD System level requirements is monitored in a series of requirements and design reviews both at the system and element levels, as well as the requirements traceability and Element certification efforts that lead to approved, configuration controlled element capability specifications.

Common Threat Engineering:

Common threat engineering produces common and consistent adversary trajectory and signature data to enable BMD System and sub-system concept and requirements, design, verification, and assessment. Common Threat data is contained in the Adversary Capability Document (ACD) and Adversary Data Packages (ADP) and drives BMDS ground tests, flight tests, digital simulations, and pre-mission analysis activities. It is also invoked by the BMD system Description Document and BMD System Specification. Aegis BMD system engineers adapt this data to input into validated and accredited 6-Degrees of Freedom (DOF) system models.

Proving Missile Defense:

Working with the Services` Operational Test Agencies (OTA), with the support of the Director of Operational Test and Evaluation (DOT&E), MDA has developed a test program to improve confidence in missile defense capabilities under development and ensure the capabilities transferred to the war fighter are operationally effective, suitable, and survivable.

The BMDS performance evaluation strategy is to develop models and simulations of the BMDS and compare their predictions to empirical data collected through comprehensive flight and ground testing to validate their accuracy, rather than physically testing all possible combinations of BMDS configurations, engagement conditions, and target phenomena. The BMDS test review determined how to validate our models and simulations so that our war fighting commanders have confidence in the predicted performance of the BMDS, especially when those commanders consider employing the BMDS in ways other than originally planned or against threats unknown at this time.

The test plan review resulted in a Integrated Master Test Plan (IMTP) that is event-oriented and extends until the collection of all identified data is completed to ensure adequate test investments.

Missile Defense Agency Page 2 of 15 R-1 Line Item #111

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Missile Defense Agency

**DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

0400: Research, Development, Test & Evaluation, Defense-Wide

PE 0604881C: SM-3 BLOCK IIA CO-DEVELOPMENT

BA 4: Advanced Component Development & Prototypes (ACD&P)

| B. Program Change Summary (\$ in Millions)            | FY 2010 | FY 2011 | <b>FY 2012 Base</b> | FY 2012 OCO | FY 2012 Total |
|---|---------|---------|---------------------|-------------|---------------|
| Previous President's Budget                           | 255.987 | 318.800 | 405.500             | -           | 405.500       |
| Current President's Budget                            | 247.825 | 318.800 | 424.454             | -           | 424.454       |
| Total Adjustments                                     | -8.162  | -       | 18.954              | -           | 18.954        |
| <ul> <li>Congressional General Reductions</li> </ul>  |         | -       |                     |             |               |
| <ul> <li>Congressional Directed Reductions</li> </ul> |         | -       |                     |             |               |
| <ul> <li>Congressional Rescissions</li> </ul>         | -       | -       |                     |             |               |
| <ul> <li>Congressional Adds</li> </ul>                |         | -       |                     |             |               |
| <ul> <li>Congressional Directed Transfers</li> </ul>  |         | -       |                     |             |               |
| Reprogrammings  | -2.862  | -       |                     |             |               |
| SBIR/STTR Transfer                                    | -5.300  | -       |                     |             |               |
| Other Adjustment Detail                               | -       | -       | 18.954              | -           | 18.954        |

# **Change Summary Explanation**

As part of the Department of Defense reform agenda, implements a zero-based review of the organization to align resources to the most critical priorities and eliminate lower priority functions. The FY12 \$18,954 thousand dollar increase in this program element is the resultant of efficiency savings efforts to keep costs down.

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| Exhibit R-2A, RDT&E Project Just                          | ification: Pl | 3 2012 Missi       | le Defense / | Agency      |                                     |        |  | <b>DATE</b> : February 2011 |          |         |  |  |
|---|---------------|--------------------|--------------|-------------|-------------------------------------|--------|--|-----------------------------|----------|---------|--|--|
| APPROPRIATION/BUDGET ACTIV                                | ΊΤΥ           |                    | -            | R-1 ITEM N  | OMENCLA                             | TURE   |  | PROJECT                     |          |         |  |  |
| 0400: Research, Development, Test                         | PE 060488     | 1C: <i>SM-3 BL</i> | OCK IIA CC   | )_          | MD09: SM-3 Block IIA Co-Development |        |  |                             |          |         |  |  |
| BA 4: Advanced Component Development & Prototypes (ACD&P) |               |                    |              | DEVELOPMENT |                                     |        |  |                             |          |         |  |  |
| COST (\$ in Millions)                                     |               |                    | FY 2012      | FY 2012     | FY 2012                             | ->/ /- |  |                             | <b>-</b> | Cost To |  |  |

| COST (\$ in Millions)                   | FY 2010 | FY 2011 | FY 2012<br>Base | FY 2012<br>OCO | FY 2012<br>Total | FY 2013 | FY 2014 | FY 2015 | FY 2016 | Cost To<br>Complete | Total Cost |
|---|---------|---------|-----------------|----------------|------------------|---------|---------|---------|---------|---------------------|------------|
| MD09: SM-3 Block IIA Co-<br>Development | 247.825 | 318.800 | 407.500         | -              | 407.500          | 343.495 | 268.447 | 196.344 | 25.156  | Continuing          | Continuing |
| Quantity of RDT&E Articles              | 0       | 0       | 0               |                | 0                | 0       | 0       | 0       | 0       |                     |            |

### A. Mission Description and Budget Item Justification

The U.S. and Japan have a mutual interest in the evolutionary development of improvements to the SM-3. In FY 2006, the two countries signed a MOU for the codevelopment of an upgraded, 21-inch diameter SM-3 missile (SM-3 Blk IIA). The objective of the SCD project is the development and initial at-sea flight test of the SM-3 Blk IIA missile. The SM-3 Blk IIA missile will increase the area that can be defended by Aegis BMD and increase the probability of kill against a larger threat set. It will leverage enhanced capability provided by BMDS sensor upgrades. The SM-3 Blk IIA missile development will build upon established joint research investments by both the U.S. and Japan will equitable share both work and cost.

Key technology improvements planned for the SM-3 Blk IIA missile include an increase in velocity and an increase in range provided by a 21-inch diameter rocket motor propulsion stack, and more than doubled seeker sensitivity and more than three times divert capability incorporated in an advanced kinetic warhead. Key component technologies to be developed under this Annex include, but are not limited to: Lightweight nosecone, advanced kinetic warhead, 21-inch second stage rocket motor, and 21-inch third stage rocket motor.

The Scope of Work of the SCD project can be defined in three phases:

Phase I takes the program through System Design Review (SDR) completion. Aegis BMD will execute risk reduction efforts for the propulsion, nosecone, seeker and Divert Attitude Control System (DACS) development efforts and test plans, and conduct requirements definition for the SM-3 Blk IIA missile configuration.

Phase II will refine the scope of work from SDR through Critical Design Review (CDR) completion. Aegis BMD will refine requirements and define the performance allocation and component configuration for the development and testing of the SM-3 Blk IIA missile. Both parties will design, fabricate, test, and evaluate the SM-3 Block IIA missile sections per the agreed work-share.

Phase III will refine the scope of work from CDR to the completion of the SCD flight test program as defined in the Agreement. This phase defines developmental cost share agreements between the United States and the Government of Japan, completes component engineering and integration, executes cooperative flight tests, and continues discussions on production and maintenance options.

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The SCD project will:

-Develop components for the SM-3 Blk IIA missile and integrate them into an All Up Round (AUR):

| Exhibit R-2A, RDT&E Project Justification: PB 2012 Missile Defense   | Agency  |                      | DATE: February 2011        |
|--|---|----------------------|----------------------------|
| APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P) | R-1 ITEM NOMENCLATURE PE 0604881C: SM-3 BLOCK IIA CO- DEVELOPMENT | PROJECT<br>MD09: SM- | 3 Block IIA Co-Development |

- -21`` 2nd and 3rd stage components
- -21" nosecone
- -Advanced kinetic warhead
- -Advanced Seeker
- -Large Diameter Divert and Attitude Control System
- -Integrate the SM-3 Blk IIA missile and VLS with Aegis ship systems:
- -Includes development of a light weight VLS canister
- -Conduct test and evaluation using ground- and flight testing using a modified Aegis BMD 4.0.1 system

| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each) | FY 2010 | FY 2011 | FY 2012 |
|--|---------|---------|---------|
| Title: SM-3 Blk IIA Development (SCD)  | 247.825 | 318.800 | 407.500 |
| Articles   | 0       | 0       | 0       |
| Description: See Description Below   |         |         |         |
| FY 2010 Accomplishments:   |         |         |         |
| -Completed Requirements Finalization Review for the SM-3 Blk IIA missile.        |         |         |         |
| -Continued risk reduction efforts for SM-3 Blk IIA components:                   |         |         |         |
| -Advanced kinetic warhead  |         |         |         |
| -Large Diameter DACS   |         |         |         |
| -Continued development of SM-3 Blk IIA including the following components:       |         |         |         |
| -21-inch diameter missile, including new 2nd and 3rd stage sections              |         |         |         |
| -21-inch diameter nosecone   |         |         |         |
| -Advanced kinetic warhead  |         |         |         |
| -Advanced Seeker   |         |         |         |
| -Large Diameter DACS   |         |         |         |
| -Lightweight Composite Canister  |         |         |         |
| -Completed missile major-section-level Preliminary Design Reviews                |         |         |         |
| -2nd stage rocket motor  |         |         |         |

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|--|---|--------------------|----------|--------------|---------|
| Exhibit R-2A, RDT&E Project Justification: PB 2012 Missile Defens  | se Agency   |                    | DATE: Fe | bruary 2011  |         |
| APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)   | R-1 ITEM NOMENCLATURE PE 0604881C: SM-3 BLOCK IIA CO- DEVELOPMENT | PROJEC<br>MD09: SA |          | \ Co-Develop | ment    |
| B. Accomplishments/Planned Programs (\$ in Millions, Article Qu  | antities in Each)   |                    | FY 2010  | FY 2011      | FY 2012 |
| -3rd stage rocket motor (motor only) -3rd stage Thrust Vector Control (TVC) -MK 72 Forward Dome -Booster Separation Assembly -Steering Control Section -Guidance Section (GS) Preliminary Design Review (PDR), Kinetic W -Developed Prime Item Development Specifications (PIDS), Critical It Documents (ICDs) -Continued lightweight canister and vertical launch system modification  FY 2011 Plans:   | em Development Specifications (CIDs) and Inte                     | erface Control     |          |              |         |
| -SM-3 Blk IIA Missile Development:   |   |                    |          |              |         |
| -Complete Incremental Missile Section Level PDRsComplete SCD Preliminary Design Review (PDR)Conduct missile section-level Critical Design Reviews (CDRs)Commence missile integration and test demoConduct 2nd and 3rd stage motor structural and shock testsComplete 2nd and 3rd stage rocket motor static firing testComplete technology maturation efforts for Divert and Attitude Control Integrated Circuit (ROIC) to obtain a Technical Readiness Level of 6 III-BMD 4.0.1 Engineering Release (ENG REL) Development: |   | nd Read Out        |          |              |         |
| -Complete SCD In Process Review -Conduct Aegis BMD 4.0.1 (ENG REL) SDR -Initiate BMD 4.0.1 (ENG REL) PDR preparation, to include model an -Complete AWS/SM-3 BLK IIA interface development in support of SC -Completion of Technology Maturation Efforts for Canister Composite 2012 -Conduct MK 29 MOD 0 Canister PDR -Complete Class I ECP (Engineering Change Proposal) detailing Vert -T&E:  | CD PDR in FY 2011 Shell Structure in support of Level 6 by SCD C  |                    |          |              |         |

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| Exhibit R-2A, RDT&E Project Justification: PB 2012 Missile Defer  | nse Agency  |                     | DATE: Feb | oruary 2011         |             |
|---|---|---------------------|-----------|---------------------|-------------|
| APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)  | R-1 ITEM NOMENCLATURE PE 0604881C: SM-3 BLOCK IIA CO- DEVELOPMENT | PROJECT<br>MD09: SM |           | Co-Developi         | ment        |
| B. Accomplishments/Planned Programs (\$ in Millions, Article Qu   | uantities in Each)  |                     | FY 2010   | FY 2011             | FY 2012     |
| -Continue requirements definition, Material Purchase and Fabrication CTV-2 Ground Based Tests -Continue Test Document Preparation   | n of VLS Tilt Fixture and Enclosures for PTV-1, C                 | ΓV-1 and            |           |                     |             |
| FY 2012 Plans: -SM-3 Blk IIA Missile Development:   |   |                     |           |                     |             |
| -Complete missile section-level CDRsConduct SM-3 Blk IIA Critical Design Review (CDR)Obtain Weapons System Engineering Safety Review Board approva -Complete integrated system demonstrationComplete system component hardware demonstrationComplete planning for retrained firing testBMD 4.0.1 Engineering Release Development: | al of missile safety design.                                      |                     |           |                     |             |
| -Conduct Aegis BMD 4.0.1 (ENG REL) PDRConduct analysis and design in preparation for BMD 4.0.1 (ENG RE-Provide SCD CDR analysis support (BMD 4.0.1 (ENG REL) models-T&E:  |   |                     |           |                     |             |
| -Complete shock, vibration, temperature/humidity, and hydrostatic pro-Conduct analysis and planning for restrained firing test in FY 2013Conduct requirements development, traceability, and certification of BMD 5.1.  | •   |                     |           |                     |             |
|   | Accomplishments/Planned Progran                                   | s Subtotals         | 247.825   | 318.800             | 407.500     |
|   | ase OCO Total FY 2013 FY 2  |                     |           | Cost To<br>Complete | Total Cos   |
| • 0603890C: Ballistic Missile 355.870 402.769 373.  Defense Enabling Programs   | 563 373.563 331.203 314.  | 193 336.749         | 346.560   | ) Continuing        | , Continuin |

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Missile Defense Agency

**DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

PROJECT

0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)

PE 0604881C: SM-3 BLOCK IIA CO-

MD09: SM-3 Block IIA Co-Development

DEVELOPMENT

## C. Other Program Funding Summary (\$ in Millions)

|                           |         |         | <u>FY 2012</u> | <u>FY 2012</u> | <u>FY 2012</u> |         |         |         |           | Cost To         |            |
|---------------------------|---------|---------|----------------|----------------|----------------|---------|---------|---------|-----------|-----------------|------------|
| <u>Line Item</u>          | FY 2010 | FY 2011 | <u>Base</u>    | <u>000</u>     | <u>Total</u>   | FY 2013 | FY 2014 | FY 2015 | FY 2016   | <b>Complete</b> | Total Cost |
| Line Number 34: AEGIS BMD | 225.625 | 94.080  | 565.393        |                | 565.393        | 675.126 | 737.440 | 807.883 | 1,025.521 | Continuing      | Continuing |

# D. Acquisition Strategy

The SM-3 Cooperative Development program for the SM-3 Blk IIA missile will utilize a performance-based approach that ties program decision milestones to the performance of development prototypes, as well as Propulsion Test Vehicle and Control Test Vehicle flight test article performance. Acquisition of hardware, software modifications and required services will occur in conjunction with contractual and tasking efforts to U.S. Navy work and events, and as defined by signed agreements between the Governments of the United States and Japan.

The production preparation phase agreements are anticipated to be signed in FY 2011.

Competition will be used for procurement of any products or services, when appropriate.

## E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Missile Defense Agency

APPROPRIATION/BUDGET ACTIVITY

0400: Research, Development, Test & Evaluation, Defense-Wide

BA 4: Advanced Component Development & Prototypes (ACD&P)

R-1 ITEM NOMENCLATURE

PE 0604881C: SM-3 BLOCK IIA CO-

DEVELOPMENT

PROJECT

MD09: SM-3 Block IIA Co-Development

**DATE:** February 2011

| <b>Product Development</b>   | (\$ in Millio                | ns)                               |                              | FY 2    | 2011          | FY 2<br>Ba | 2012<br>se    |      | 2012<br>CO    | FY 2012<br>Total |                     |            |                                |
|--|------------------------------|-----------------------------------|------------------------------|---------|---------------|------------|---------------|------|---------------|------------------|---------------------|------------|--------------------------------|
| Cost Category Item   | Contract<br>Method<br>& Type | Performing<br>Activity & Location | Total Prior<br>Years<br>Cost | Cost    | Award<br>Date | Cost       | Award<br>Date | Cost | Award<br>Date | Cost             | Cost To<br>Complete | Total Cost | Target<br>Value of<br>Contract |
| SM-3 Blk IIA Development<br>(SCD) SM-3 Blk IIA<br>Development MD09                     | SS/CPAF                      | RAYTHEON:AZ                       | 356.927                      | 234.287 | Nov 2010      | 308.145    | Nov 2011      | -    |               | 308.145          | Continuing          | Continuing | Continuing                     |
| SM-3 Blk IIA Development<br>(SCD) SM-3 Blk<br>IIA Development -<br>2010714770752 MD09  | MIPR                         | NSWC/DD/VA:VA                     | 10.010                       | 3.110   | Nov 2010      | 4.090      | Nov 2011      | -    |               | 4.090            | Continuing          | Continuing | Continuing                     |
| SM-3 Blk IIA Development<br>(SCD) SM-3 Blk IIA<br>Development MD09                     | MIPR                         | JHU/APL:MD                        | 15.126                       | 12.793  | Nov 2010      | 16.826     | Nov 2011      | -    |               | 16.826           | Continuing          | Continuing | Continuing                     |
| SM-3 Blk IIA Development<br>(SCD) SM-3 Blk<br>IIA Development -<br>20107147707531 MD09 | MIPR                         | MIT/LL:MA                         | 3.442                        | 1.061   | Nov 2010      | 1.395      | Nov 2011      | -    |               | 1.395            | Continuing          | Continuing | Continuing                     |
| SM-3 Blk IIA Development<br>(SCD) SM-3 Blk<br>IIA Development -<br>20107147707534 MD09 | MIPR                         | NSWC/PHD:CA                       | 6.491                        | 0.324   | Nov 2010      | 0.426      | Nov 2011      | -    |               | 0.426            | Continuing          | Continuing | Continuing                     |
| SM-3 Blk IIA Development<br>(SCD) SM-3 Blk<br>IIA Development -<br>20107147707539 MD09 | MIPR                         | NSWC IH:MD                        | 5.209                        | 0.344   | Nov 2010      | 0.452      | Nov 2011      | -    |               | 0.452            | Continuing          | Continuing | Continuing                     |
| SM-3 Blk IIA Development<br>(SCD) SM-3 Blk<br>IIA Development -<br>20107147707544 MD09 | MIPR                         | VARIOUS:VARIOUS                   | 7.163                        | 5.753   | Nov 2010      | 7.567      | Nov 2011      | -    |               | 7.567            | Continuing          | Continuing | Continuing                     |
| SM-3 Blk IIA Development<br>(SCD) BMD 4.0.1 Eng Rel<br>MD09                            | SS/CPAF                      | LOCKHEED<br>MARTIN:NJ             | 12.500                       | 14.111  | Dec 2010      | 16.412     | Dec 2011      | -    |               | 16.412           | Continuing          | Continuing | Continuing                     |
| SM-3 Blk IIA Development<br>(SCD) BMD 4.0.1 Eng Rel -<br>2010896767305 MD09            | MIPR                         | SEG:CA                            | 2.300                        | 0.450   | Dec 2010      | 0.523      | Dec 2011      | -    |               | 0.523            | Continuing          | Continuing | Continuing                     |
|  | MIPR                         | VARIOUS:VA, MD, NJ,<br>CA         | -                            | 1.234   | Dec 2010      | 1.435      | Dec 2011      | -    |               | 1.435            | Continuing          | Continuing | Continuing                     |

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Missile Defense Agency

APPROPRIATION/BUDGET ACTIVITY

0400: Research, Development, Test & Evaluation, Defense-Wide

BA 4: Advanced Component Development & Prototypes (ACD&P)

R-1 ITEM NOMENCLATURE

PE 0604881C: SM-3 BLOCK IIA CO-

DEVELOPMENT

PROJECT

MD09: SM-3 Block IIA Co-Development

**DATE:** February 2011

| Product Development (   | \$ in Millio                 | ns)                               |                              | FY 2    | 2011          |         | 2012<br>ise   |      | 2012<br>CO    | FY 2012<br>Total |                     |            |                                |
|---|------------------------------|-----------------------------------|------------------------------|---------|---------------|---------|---------------|------|---------------|------------------|---------------------|------------|--------------------------------|
| Cost Category Item  | Contract<br>Method<br>& Type | Performing<br>Activity & Location | Total Prior<br>Years<br>Cost | Cost    | Award<br>Date | Cost    | Award<br>Date | Cost | Award<br>Date | Cost             | Cost To<br>Complete | Total Cost | Target<br>Value of<br>Contract |
| SM-3 Blk IIA Development<br>(SCD) BMD 4.0.1 Eng Rel -<br>2010896767309 MD09 |                              |                                   |                              |         |               |         |               |      |               |                  |                     |            |                                |
| SM-3 Blk IIA Development<br>(SCD) BMD 4.0.1 Eng Rel -<br>2010896767314 MD09 | MIPR                         | NSWC/DD/<br>VA:Dahlgren, VA       | -                            | 0.780   | Dec 2010      | 0.907   | Dec 2011      | -    |               | 0.907            | Continuing          | Continuing | Continuing                     |
| SM-3 Blk IIA Development<br>(SCD) BMD 4.0.1 Eng Rel -<br>2010896767319 MD09 | MIPR                         | JHU/APL:MD                        | -                            | 2.731   | Dec 2010      | 3.176   | Dec 2011      | -    |               | 3.176            | Continuing          | Continuing | Continuing                     |
| SM-3 Blk IIA Development<br>(SCD) Testing & Evaluation<br>MD09              | MIPR                         | VARIOUS:MD, VA, CA,<br>HI         | -                            | 1.500   | Nov 2010      | 3.600   | Nov 2011      | -    |               | 3.600            | Continuing          | Continuing | Continuin                      |
| SM-3 Blk IIA Development<br>(SCD) SM-3 Blk IIA Canister<br>MD09             | C/CPIF                       | Lockheed<br>Martin:Baltimore, MD  | -                            | 19.826  | Dec 2010      | 16.200  | Dec 2011      | -    |               | 16.200           | Continuing          | Continuing | Continuin                      |
| SM-3 Blk IIA Development<br>(SCD) SM-3 Blk IIA VLS<br>MD09                  | MIPR                         | BAE:MD                            | -                            | 0.968   | Dec 2010      | 1.416   | Dec 2011      | -    |               | 1.416            | Continuing          | Continuing | Continuing                     |
| SM-3 Blk IIA Development<br>(SCD) Mission Assurance<br>MD09                 | MIPR                         | Various:VA, MD, NJ,<br>CA         | -                            | 0.400   | Dec 2010      | 0.600   | Dec 2011      | -    |               | 0.600            | Continuing          | Continuing | Continuin                      |
| SM-3 Blk IIA Development<br>(SCD) SCD MD09                                  | MIPR                         | MDA Various:VA, MD                | -                            | 19.128  | Dec 2010      | 24.330  | Dec 2011      | -    |               | 24.330           | Continuing          | Continuing | Continuin                      |
|   |                              | Subtotal                          | 419.168                      | 318.800 |               | 407.500 |               | -    |               | 407.500          |                     |            |                                |

#### Remarks

Increase in FY 2012 cost are due to completing the SCD Preliminary Design Review and conducting the missile section-level Critical Design Reviews.

| Support (\$ in Millions) |                              |                                |                              | FY   | 2011          |      | 2012<br>ise   | FY 2 | -             | FY 2012<br>Total |                     |            |                                |
|--------------------------|------------------------------|--------------------------------|------------------------------|------|---------------|------|---------------|------|---------------|------------------|---------------------|------------|--------------------------------|
| Cost Category Item       | Contract<br>Method<br>& Type | Performing Activity & Location | Total Prior<br>Years<br>Cost | Cost | Award<br>Date | Cost | Award<br>Date | Cost | Award<br>Date | Cost             | Cost To<br>Complete | Total Cost | Target<br>Value of<br>Contract |
|                          |                              | Subtotal                       | -                            | -    |               | -    |               | -    |               | -                | 0.000               | 0.000      | 0.000                          |

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Missile Defense Agency

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

**DATE:** February 2011

0400: Research, Development, Test & Evaluation, Defense-Wide

PE 0604881C: SM-3 BLOCK IIA CO-

PROJECT

MD09: SM-3 Block IIA Co-Development

BA 4: Advanced Component Development & Prototypes (ACD&P)

DEVELOPMENT

| est and Evaluation (\$ | in Millions                  |                                   |                              | FY 2    | 2011          | FY 2        | -             | FY 2<br>OC |               | FY 2012<br>Total |                     |            |                                |
|------------------------|------------------------------|-----------------------------------|------------------------------|---------|---------------|-------------|---------------|------------|---------------|------------------|---------------------|------------|--------------------------------|
| Cost Category Item     | Contract<br>Method<br>& Type | Performing<br>Activity & Location | Total Prior<br>Years<br>Cost | Cost    | Award<br>Date | Cost        | Award<br>Date | Cost       | Award<br>Date | Cost             | Cost To<br>Complete | Total Cost | Target<br>Value of<br>Contrac  |
|                        |                              | Subtotal                          | -                            | -       |               | -           |               | -          |               | -                | 0.000               | 0.000      | 0.00                           |
| Management Services    | (\$ in Millio                | ns)                               |                              | FY 2    | 2011          | FY 2<br>Bas | -             | FY 2       |               | FY 2012<br>Total |                     |            |                                |
| Cost Category Item     | Contract<br>Method<br>& Type | Performing<br>Activity & Location | Total Prior<br>Years<br>Cost | Cost    | Award<br>Date | Cost        | Award<br>Date | Cost       | Award<br>Date | Cost             | Cost To<br>Complete | Total Cost | Target<br>Value of<br>Contrac  |
|                        |                              | Subtotal                          | -                            | -       |               | -           |               | -          |               | -                | 0.000               | 0.000      | 0.00                           |
|                        |                              |                                   | Total Prior<br>Years<br>Cost | FY 2    | 2011          | FY 2        | -             | FY 2       |               | FY 2012<br>Total | Cost To<br>Complete | Total Cost | Target<br>Value of<br>Contract |
|                        |                              | Project Cost Totals               | 419.168                      | 318.800 |               | 407.500     |               | _          |               | 407.500          |                     |            |                                |

Remarks

**UNCLASSIFIED** 

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| Exhibit R-4, RDT&E Schedule Profile: PB 2012 Missile Defense Ag   | ency  | DATE: February 2011                         |
|---|---|---|
| APPROPRIATION/BUDGET ACTIVITY  0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P) | R-1 ITEM NOMENCLATURE PE 0604881C: SM-3 BLOCK IIA CO- DEVELOPMENT | PROJECT MD09: SM-3 Block IIA Co-Development |
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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Missile Defense Agency

R-1 ITEM NOMENCLATURE

**DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY

0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P) PE 0604881C: SM-3 BLOCK IIA CO-

PROJECT

DEVELOPMENT

MD09: SM-3 Block IIA Co-Development

# Schedule Details

|   | St      | End  |         |      |  |
|---|---------|------|---------|------|--|
| Events  | Quarter | Year | Quarter | Year |  |
| SM-3 Blk IIA Preliminary Design Review (PDR)      | 2       | 2011 | 2       | 2011 |  |
| BMD 4.0.1 Eng REL Preliminary Design Review (PDR) | 2       | 2012 | 2       | 2012 |  |
| SM-3 Blk IIA Critical Design Review (CDR)         | 2       | 2012 | 2       | 2012 |  |
| BMD 4.0.1 Eng REL Critical Design Review (CDR)    | 2       | 2013 | 2       | 2013 |  |
| BMD 4.0.1 Eng REL: Engineering Assessment (EA) #1 | 4       | 2014 | 4       | 2014 |  |
| BMD 4.0.1 Eng REL: Engineering Assessment (EA) #2 | 1       | 2015 | 1       | 2015 |  |
| Restrained Level Firing                           | 1       | 2013 | 1       | 2013 |  |
| Propulsion Test Vehicle -1 (PTV-1)                | 4       | 2013 | 4       | 2013 |  |
| Control Test Vehicle - 1 (SCD CTV-1)              | 2       | 2014 | 2       | 2014 |  |
| Control Test Vehicle -2 (SCD CTV-2)               | 3       | 2014 | 3       | 2014 |  |
| SCD Flight Test Mission 1 (SFTM-1)                | 1       | 2015 | 1       | 2015 |  |
| SCD Flight Test Mission 2 (SFTM-2)                | 2       | 2015 | 2       | 2015 |  |

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| Exhibit R-2A, RDT&E Project Jus  | tification: PE | 3 2012 Missi | le Defense A  | Agency         |                  |         |                                    |         | DATE: Feb | uary 2011           |            |
|--|----------------|--------------|---|----------------|------------------|---------|------------------------------------|---------|-----------|---------------------|------------|
| APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P) |                |              | R-1 ITEM NOMENCLATURE PE 0604881C: SM-3 BLOCK IIA CO- DEVELOPMENT |                |                  |         | PROJECT MD40: Program-Wide Support |         |           |                     |            |
| COST (\$ in Millions)  | FY 2010        | FY 2011      | FY 2012<br>Base   | FY 2012<br>OCO | FY 2012<br>Total | FY 2013 | FY 2014                            | FY 2015 | FY 2016   | Cost To<br>Complete | Total Cost |
| MD40: Program-Wide Support   | -              | -            | 16.954  | -              | 16.954           | 13.699  | 10.997                             | 7.209   | 0.009     | Continuing          | Continuing |
| Quantity of RDT&F Articles   | 0              | 0            | 0   |                | 0                | 0       | 0                                  | 0       | 0         |                     |            |

### A. Mission Description and Budget Item Justification

Program-Wide Support (PWS) contains non-headquarters management costs in support of MDA functions and activities across the entire Ballistic Missile Defense System (BMDS). Includes Government Civilians, Advisory and Assistance Services, and Federally Funded Research and Development Contracts (FFRDC) providing integrity and oversight of the BMDS as well as supporting MDA in enabling the development and evaluation of technologies that will respond to the changing threat. Other costs included provide facility capabilities for MDA Executing Agent locations (with the exception of Federal Office Building 2 after FY 2011), such as physical and technical security, legal services, travel and agency training, office and equipment leases, rents and utilities, data and unified communications support, supplies and maintenance, and similar operating expenses. Also includes legal settlements, and foreign currency fluctuations on a limited number of foreign contracts. In keeping with congressional intent, PWS is allocated among the PEs on a pro-rata basis and therefore fluctuates by year based on the total MDA budget and the individual PE's budget amount.

The budget project did not exist in program wide support in FY2010.

| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)             | FY 2010 | FY 2011 | FY 2012 |
|--|---------|---------|---------|
| Title: Civilian Salaries and Support   | -       | -       | 16.954  |
| Articles:  | 0       | 0       | 0       |
| Description: See Description Below   |         |         |         |
| FY 2010 Accomplishments: The budget project did not exist in program wide support in FY2010. |         |         |         |
| FY 2011 Plans: The budget project did not exist in program wide support in FY2011.           |         |         |         |
| FY 2012 Plans: See paragraph A, Mission Description and Budget Item Justification            |         |         |         |
| Accomplishments/Planned Programs Subtotals   | -       | -       | 16.954  |

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|  | UNCLASSIFIED  |                                    |  |
|--|---|------------------------------------|--|
| Exhibit R-2A, RDT&E Project Justification: PB 2012 Missile Defense   | DAT   | DATE: February 2011                |  |
| APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P) | R-1 ITEM NOMENCLATURE PE 0604881C: SM-3 BLOCK IIA CO- DEVELOPMENT | PROJECT MD40: Program-Wide Support |  |
| C. Other Program Funding Summary (\$ in Millions)  N/A  D. Acquisition Strategy  N/A  E. Performance Metrics  NA                                     |   |                                    |  |

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